

REMARKS

Status of claims

Claims 9 to 21, directed to the non-elected group of claims, have here been cancelled without prejudice.

Claims 1 and 3 to 8 have been rejected under 35 U.S.C. sec. 103.

New dependent claims 22-27 have been added by this amendment.

Section 103 rejections

Claims 1 and 3 to 8 have been rejected as unpatentable over U.S. patent 4,162,908 to Rau, in argued combination with Ruppert (U.S. patent 5,788,730), and in further argued combination with Edahiro (U.S. patent 4,402,720), and/or Gouskov (U.S. patent 6,535,240) for features of dependent claims.

Reconsideration of this rejection is respectfully requested.

Claim 1 as revised recites a method for producing a preform from synthetic quartz glass by a plasma-assisted deposition process. The method comprises supplying a hydrogen-free media flow containing a glass starting material and a carrier gas to a multi-nozzle deposition burner, introducing the glass starting material by the deposition burner into a plasma zone wherein the glass starting material is oxidized so as to form SiO₂ particles, and depositing the SiO₂ particles on a deposition surface while being directly vitrified. The deposition burner focuses the media flow towards the plasma zone, and the deposition burner includes a media nozzle that focuses the media flow onto the plasma zone. The media nozzle has a wall defining a passage that communicates with a nozzle opening so that the media flow passes through the

passage and through the nozzle opening. The wall is configured so that adjacent to the nozzle opening, the passage tapers in the direction of the plasma zone. Use of this method improves the deposition efficiency of glass starting material into the plasma zone due to the focusing of the media flow through the tapered media nozzle. See specification, page 4 lines 13 to 14. This invention is not suggested by the prior art, and reconsideration of the rejection is respectfully requested.

Rau describes a typical plasma deposition process of the prior art, which is illustrated in figs. 1 and 2 of the reference. The burner has three cylindrical glass tubes 10, 11 and 12, and it emits a plasma flame. There is no detail of the glass tubes shown or described, and, more specifically, no tapering of any tube shown or suggested.

Ruppert shows a central nozzle 6 delivering SiCl_4 and oxygen. See col. 5, line 63. The SiCl_4 exits the central nozzle 6 through orifice 16 and is converted to SiO_2 . See col. 6, lines 4 to 7. As best seen in the sole figure of Ruppert, the central nozzle has a central bore that is cylindrical in shape with a constant radius over the whole length of the tube, and through the orifice 16 at its end. As a consequence, the central nozzle 6 of Ruppert does not have a tapered inner passage and does not focus the media flow, as claim 1 as here amended requires.

Both Rao and Ruppert therefore fail to suggest a tapered media nozzle that focuses the media flow onto the plasma zone, and reconsideration of the rejection of claim 1 is respectfully requested.

Edahiro is cited as teaching of a diffuser nozzle, and shows a cylindrical media nozzle 43 (see Fig. 4). Edahiro does not suggest a tapered media nozzle, and consequently does not affect the allowability of claim 1.

Gouskov is cited only for its teaching of use of nitrogen, and also shows purely cylindrical, non-tapering nozzles. See e.g. Gouskov, Fig. 2. Gouskov therefore does not affect the allowability of claim 1.

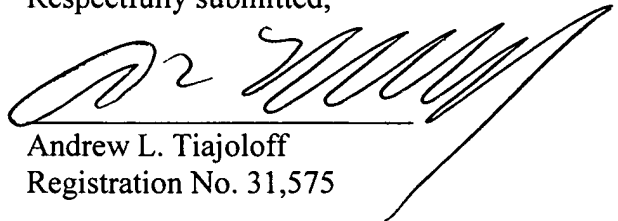
Claim 1 as amended therefore distinguishes over the prior art, and withdrawal of the rejection thereof is respectfully requested.

Dependent claims 3 to 8 and 22 to 27 depend directly or indirectly from claim 1, and therefore are believed to distinguish therewith over the prior art.

All claims here having been shown to distinguish over the prior art in structure, function and result, formal allowance is respectfully solicited.

Should any questions arise, the Examiner is invited to telephone attorney for applicants at 212-490-3285.

Respectfully submitted,



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